

OPEN MEETING



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MEMORANDUM

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2007 FEB 20 P 3: 25
TO: THE COMMISSION

AZ CORP COMMISSION
FROM: Ernest G Johnson
Director
Utilities Division

ORIGINAL

DATE: February 20, 2007

RE: IN THE MATTER OF THE COMMISSION'S FOURTH BIENNIAL TRANSMISSION ASSESSMENT ("BTA"), PURSUANT TO A.R.S. § 40-360.02.G, OF THE ADEQUACY OF EXISTING AND PLANNED TRANSMISSION FACILITIES TO MEET ARIZONA'S ENERGY NEEDS IN A RELIABLE MANNER (DOCKET NO. E-00000D-05-0040)

A.R.S. § 40-360.02.A states "Every person contemplating construction of any transmission line within the state during any ten year period shall file a ten year plan with the commission on or before January 31 of each year." A.R.S. §40-360.02.E states "The plans shall be reviewed biennially by the commission and the commission shall issue a written decision regarding the adequacy of the existing and planned transmission facilities in this state to meet the present and future energy needs of this state in a reliable manner."

Staff has completed its fourth biennial assessment of Arizona's existing and planned transmission system. Staff filed its report with Docket Control on February 14, 2007, in compliance with the aforementioned statute requirement. Staff's report addresses the adequacy and reliability of Arizona's existing and planned transmission system and offers conclusions and recommendations for the Commission's consideration and action.

This transmission assessment represents the professional opinion of Commission Staff and its Consultant, KEMA. The BTA is not an evaluation of individual transmission provider's facilities or quality of service. This BTA report does not set Commission policy and does not recommend specific action for any individual Arizona transmission provider. It assesses the adequacy of Arizona's transmission system to reliably meet existing and future energy needs of the state. Staff concludes in its report that the utility industry has implemented steps to address the regional transmission planning issues, provide transmission enhancements and additions, develop solutions for transmission import constraints in various load pockets, and address local transmission system inadequacies.

Arizona Corporation Commission

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FEB 20 2007

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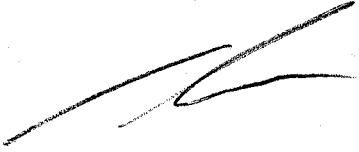

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THE COMMISSION

February 20, 2007

Page 2

Staff recommends that the Commission adopt Staff's Fourth Biennial Transmission Assessment as set forth in Staff's proposed order.

Ernest G. Johnson
Director
Utilities Division

EGJ:PKB:lhv\CH

ORIGINATOR: Prem K. Bahl

1 **BEFORE THE ARIZONA CORPORATION COMMISSION**

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8 IN THE MATTER OF THE COMMISSION'S)
FOURTH BIENNIAL TRANSMISSION)
9 ASSESSMENT ("BTA"), PURSUANT TO THE)
ADEQUACY OF EXISTING AND PLANNED)
10 TRANSMISSION FACILITIES TO MEET)
ARIZONA'S ENERGY NEEDS IN A RELIABLE)
11 MANNER)
_____)

DOCKET NO. E-00000D-05-0040

DECISION NO. _____

ORDER

12
13 Open Meeting
March 14, 2007
14 Phoenix, Arizona

15 BY THE COMMISSION:

16 FINDINGS OF FACT

17 1. The Utilities Division Staff ("Staff") of the Commission and its consultant,
18 KEMA, Inc., have completed the fourth biennial assessment of Arizona's existing and planned
19 transmission system. The Fourth Biennial Transmission Assessment, 2006-2015 ("Assessment"
20 or "BTA") was filed with the Commission on February 14, 2007. The report was also posted on
21 the Commission website at <http://www.cc.state.az.us/utility/electric/biennial.htm> under Hot
22 Topics.

23 2. The Commission Staff held two workshops to gather stakeholders' input.
24 Workshops were held on June 6, 2006 and September 8, 2006. The input received from the
25 workshops and subsequent correspondence has been incorporated into the BTA.

26 3. Staff's report addresses the adequacy and reliability of Arizona's existing and
27 planned transmission system and offers conclusions and recommendations for the Commission's
28 consideration and action.

1 4. The ten-year transmission plans and study reports filed by the participants with
2 the Commission are necessary to evaluate the adequacy and reliability of a transmission system.
3 Staff was assisted by a consulting organization, KEMA, Inc., in analyzing the technical reports
4 and documents filed by various organizations. Staff assembled and reviewed a broad spectrum
5 of information and technical reports addressing transmission assessments from a national,
6 western interconnection, regional, state and local utility perspective.

7 5. The electricity industry responded formally to the findings in the first, second and
8 third biennial transmission assessment in a variety of ways. Regional transmission planning has
9 been expanded, transmission facilities are being developed to increase transmission capacity out
10 of the Palo Verde Hub, and local transmission import constraints are being sufficiently mitigated.

11 6. This transmission assessment represents the professional opinion of Staff and its
12 Consultant, KEMA. The BTA is not an evaluation of individual transmission provider's
13 facilities or quality of service. This BTA report does not set Commission policy and does not
14 recommend specific action for any individual Arizona transmission provider. It assesses the
15 adequacy of Arizona's transmission system to reliably meet existing and future energy needs of
16 the state. Staff concludes in its report that the utility industry has implemented steps to address
17 the regional transmission planning issues, provide transmission enhancements and additions,
18 develop solutions for transmission import constraints in various load pockets, and address local
19 transmission system inadequacies. These conclusions are based upon the following findings:

- 20 1. The electric industry in Arizona has been very responsive to concerns raised in
21 Staff's Third BTA. In particular, the industry has performed studies and
22 advanced projects that address Palo Verde Hub reliability issues. Palo Verde's
23 transmission system capability to handle full generation output, and reliability
24 must run ("RMR") concerns in the Phoenix and Yuma load areas.
- 25 2. The efforts of transmission providers and other stakeholders in the BTA continue
26 to result in an improved work product and more collaborative study processes.
27 Extensive regional studies addressing transmission needs have been conducted in
28 a proactive and collaborative manner. This has also led to numerous jointly
sponsored projects and synergies that increase the value of transmission projects
to Arizona.
3. Numerous new transmission and generation projects have been constructed,
announced and filed with the Commission since the prior BTAs. Some

transmission projects filed in prior BTAs have been cancelled, delayed or advanced based on changes in load, generation and import conditions. Staff finds these changes acceptable.

4. While there have been laudable efforts by stakeholders in support of coordinated regional planning activities, Staff recognizes that not all transmission projects are regional in nature. In fact, many smaller projects which are essential to serve local load areas or generators, by their very nature, do not require the participation of other stakeholders.
5. Transmission providers have performed updated RMR studies for each local transmission import constrained area (except Santa Cruz County and Mohave County) and have addressed the Third BTA RMR requirements. Uncertainty exists regarding RMR requirements in Santa Cruz County beginning 2008 and Mohave County beginning 2012, which should be addressed in filings due January 2008 for the 5th BTA.
6. In general, the existing and proposed Arizona transmission system meets the load serving requirements of the state in a reliable manner:
 - a. Many planned Extra High Voltage ("EHV") and High Voltage ("HV") projects will increase transmission system capability to support increased interstate power transfers and provide reliable transfers within the state of Arizona.
 - b. The EHV system appears to be adequate throughout the study period and the planned facilities identified in the ten-year planning process appear to be consistent with good utility practice. As is often the case, plans for the later years of the period are less well defined than those in the early years. As requested in the Third BTA, this new round of reports includes more discussion of alternate additions considered for the final five years of the study period. Given the number of alternative projects identified in the longer range plans it should be possible to supply future Arizona electric system loads in an economical and reliable fashion. Early identification of such alternatives in the BTA process allows the Staff and public to be better informed regarding future possibilities and should continue in future filings.
 - c. The RMR studies show that the RMR areas will have load-serving capacity sufficient to provide reliable supply during the next ten-year period (with the exceptions noted in Conclusion 5). Problems identified during the Third BTA in the Yuma area in 2004 and the Phoenix area in 2013 are addressed and resolved in the 2006 RMR study.
 - d. For the Phoenix and Yuma areas, based upon the study results reported for the two years examined (2008 and 2015), Staff concludes that the RMR costs and emission impacts should be negligible throughout the 2006-2015 period. For the Phoenix metropolitan area, Staff concludes that the spontaneous import limits ("SIL") and maximum load serving capability ("MLSC") increases are attributable to the transmission improvements described in the 2006 BTA

1 filings by Arizona Public Service Company ("APS") and Salt River Project
2 ("SRP"). Installation of a second North Gila 500/69 kV transformer in 2005,
3 along with the proposed Yucca 100 MW generation addition and second 500
4 kV Palo Verde-North Gila line appear to effectively meet RMR requirements
5 in the Yuma area.¹ It is possible that Tucson area RMR requirements could be
6 eliminated and the load area could have unlimited access to lower cost
7 resources from the outside market if incremental upgrades are economically
8 justified. Staff requests that Tucson Electric Power Company ("TEP")
9 provide an economic analysis of this option in its 2008 BTA filing.

10 e. The planned Arizona transmission system meets the Western Electricity
11 Coordinating Council ("WECC") and North American Electric Reliability
12 Council ("NERC") single contingency criteria (n-1). Satisfactory
13 performance of the system has also been demonstrated during the Fourth BTA
14 for significant overlapping contingencies (n-1 and n-2) as requested in the
15 Third BTA.

16 f. Arizona transmission providers are doing an effective job of planning
17 transmission upgrades and additions that improve access to capacity from
18 merchant plants at Palo Verde in a reliable manner, which in the past has been
19 stranded to some extent when the market has desired access. Some
20 improvement has already been achieved in 2006 and significant improvement
21 is expected with the addition of the Hassayampa-Pinal West-Santa Rosa 500
22 kV and Palo Verde-TS5 500 kV line additions in 2008 and 2009, respectively.
23 In conjunction with other proposed transmission upgrades, these projects
24 should significantly mitigate market limitations between Arizona, California
25 and southern Nevada.

26 g. The Fourth BTA also concludes that after the addition of Hassayampa-Pinal
27 West-Santa Rosa 500 kV and Palo Verde-TS5 500 kV lines the need for load
28 shedding in Arizona following a common corridor outage of 500 kV lines
leaving the Palo Verde Hub will be eliminated.

7. Studies investigating transmission expansion options between Arizona, southern
Nevada and New Mexico continue to explore the scope, participation and timing
of alternative projects. Other transmission expansion projects proposed in
Nevada may bring additional resources closer to the borders of Arizona. APS has
also initiated regional stakeholder discussions for a conceptual TransWest
Express 500 kV Project that could significantly increase import capability into
Arizona from future coal and wind resources in Wyoming. Such regional projects
may provide both economic and reliability benefits to Arizona consumers and
increase import/export capabilities between Arizona and surrounding markets.

8. Some new power plants have interconnected to Arizona's bulk transmission
system via single transmission line or tie rather than using Arizona's best
engineering practices of multiple lines emanating from power plants. As
interconnection of new transmission lines are considered for the Palo Verde Hub,

¹ It should be noted that APS' Yucca generation solicitation is the subject of a separate proceeding before the Commission.

the concerned parties should be encouraged to terminate at these new power plant switchyards in order to mitigate this regional reliability concern.

9. The Southwest Area Transmission Central Arizona Transmission System ("SWAT-CATS") EHV study participants conducted a joint 2015 "Tenth Year Snap-Shot (N-1) Study" for Central Arizona to assess the collective impact of individual transmission owner plans for the area. The study determined that there are no n-1 violations in the planned EHV system. Some problems were identified in lower voltage systems, however. These will need to be addressed in the respective planning processes of the individual transmission owners. Certain n-1 contingency violations occurring in the Southwest Transmission Cooperative ("SWTC") 2015 planning study and certain n-2 and extreme contingency results in TEP's 2016 case still need to be resolved. These issues occur at or beyond the last year of the current 10-year plan and there is still sufficient time to satisfactorily resolve these concerns.

10. Staff concludes that the direction of collaborative planning processes by transmission providers and stakeholders in Arizona is consistent with the spirit of the requirements for transmission planning described in Energy Policy Act-05 ("EPAct") and Federal Energy Regulatory Commission ("FERC") Order 888. This collaborative planning processes is reinforced by the recent decision of the WECC to form a Transmission Expansion Planning Policy Committee to provide a transparent West-wide stakeholder process for related data and studies.

11. Regarding the CATS-HV interim study; since the rate of population and load growth in the area of study could be quite rapid, revisiting the study every 3-5 years would be preferable to the 5-10 year cycle suggested in the report.

7. Concerns outlined by Staff in the above conclusions are not easily or quickly resolved. The public's best interest warrants effective and decisive remedies. Therefore, Staff offers the following recommendations for Commission consideration and action:

1. Continue to support use of:

a. "Guiding Principles for ACC Staff Determination of Electric System Adequacy and Reliability" to aid Staff in its determination of adequacy and reliability of power plant and transmission line projects.

b. NERC and WECC criteria and FERC policies regarding the transmission system reliability, and

c. Collaborative study activities between transmission providers and merchant plant developers for the purpose of:

i. Ensuring consumer benefits of generation additions and cost-effective transmission enhancements and interconnections, and

- 1 ii. Facilitating restructuring of the electric utility industry to reliably serve
2 Arizona consumers at just and reasonable rates via competitive wholesale
3 market.

4 2. Endorse Staff's recommendations that:

- 5 a. RMR studies continue to be performed and filed with ten year plans in even
6 numbered years for inclusion in future BTA reports and that

- 7 i. Future RMR studies continue to provide more transparent information on
8 input data and economic dispatch assumptions.

- 9 ii. More stringent study criteria and assumptions be explored and
10 implemented for RMR areas as has been done in other jurisdictions for
11 recognized load pocket areas.

- 12 b. Accept the results of the following studies provided as part of the Fourth BTA
13 filings:

- 14 i. Compliance with single contingency criteria overlapped with the bulk
15 power system facilities maintenance (n-1-1) for the first year of the BTA
16 analysis period as required by WECC and NERC.

- 17 ii. Extreme contingency outages studied for Arizona's major generation hubs
18 and major transmission stations and associated risks and consequences
19 documented if mitigating infrastructure improvements are not planned.

- 20 iii. TEP should file comments by June 30, 2007 to resolve concerns inside
21 neighboring New Mexico and Western Area Power Administration
22 ("WAPA") facilities identified in its preliminary study results for 2016.

- 23 c. Generation interconnections should be granted a Certificate of Environmental
24 Compatibility by the Commission only when they meet regional and national
25 reliability criteria and the requirements of the Commission's decisions in the
26 2004 BTA and Track A related to power plant interconnections.

- 27 d. Grant SWTC an extension to January 2008 to resolve certain n-1 contingency
28 violations in its 2015 planning study and to file expansion plans to resolve
these issues as part of its 2008-2017 plan.

- e. Regarding potential RMR requirements in Santa Cruz County beginning 2010
and Mohave County beginning 2012, UniSource Energy Corp. ("UNS") and
SWTC should be directed to file updated RMR studies in their filings due
January 2008 for the 5th BTA.

8. Staff has recommended that the Commission adopt Staff's Fourth Biennial
Transmission Assessment, 2006-2015 as set forth above.

CONCLUSIONS OF LAW

1
2 1. According to A.R.S. § 40-360.02.A, "Every person contemplating construction of
3 any transmission line within the state during any ten year period shall file a ten year plan with the
4 Commission on or before January 31 of each year."

5 2. According to A.R.S. §40-360.02.G, "The plans shall be reviewed biennially by
6 the Commission and the Commission shall issue a written decision regarding the adequacy of the
7 existing and planned transmission facilities in this state to meet the present and future energy
8 needs of this state in a reliable manner."

9 3. The Commission, having reviewed the Fourth Biennial Transmission Assessment
10 2006-2015, concludes that the assessment complies with A.R.S. §40-360.02.

ORDER

11
12 THEREFORE, IT IS ORDERED that the Fourth Biennial Transmission Assessment
13 2006 - 2015 is hereby issued as the Commission's biennial assessment in accordance with A.R.S.
14 §40-360.02.G.

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CONCLUSIONS OF LAW

1. According to A.R.S. § 40-360.02.A, "Every person contemplating construction of any transmission line within the state during any ten year period shall file a ten year plan with the Commission on or before January 31 of each year."

2. According to A.R.S. §40-360.02.G, "The plans shall be reviewed biennially by the Commission and the Commission shall issue a written decision regarding the adequacy of the existing and planned transmission facilities in this state to meet the present and future energy needs of this state in a reliable manner."

3. The Commission, having reviewed the Fourth Biennial Transmission Assessment 2006-2015, concludes that the assessment complies with A.R.S. §40-360.02.

ORDER

THEREFORE, IT IS ORDERED that the Fourth Biennial Transmission Assessment 2006 - 2015 is hereby issued as the Commission's biennial assessment in accordance with A.R.S. §40-360.02.G.

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1 IT IS FURTHER ORDERED that Staff recommendations contained herein are hereby
2 adopted by the Commission.

3 IT IS FURTHER ORDERED that this Order shall become effective immediately.

4 **BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**

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7 _____
CHAIRMAN

COMMISSIONER

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10 _____
COMMISSIONER

COMMISSIONER

COMMISSIONER

11 IN WITNESS WHEREOF, I BRIAN C. McNEIL, Executive
12 Director of the Arizona Corporation Commission, have
13 hereunto, set my hand and caused the official seal of this
14 Commission to be affixed at the Capitol, in the City of
15 Phoenix, this _____ day of _____, 2007.

16 _____
17 BRIAN C. McNEIL
18 Executive Director

19 DISSENT: _____

20 DISSENT: _____

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22 EGJ:PKB:lm\CH
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SERVICE LIST FOR: Biennial Transmission Assessment
DOCKET NO. E-00000D-05-0040

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